Amendments to the Claims

This listing of claims will replace the originally filed claims in the application.

Listing of Claims:

Claims 1 – 19 (cancelled).

Claim 20 (new): A method for converting gaseous hydrocarbons to liquid hydrocarbons in which the Fischer-Tropsch process is employed, said process producing liquid hydrocarbons and a waste gas comprising at least hydrogen, carbon monoxide, carbon dioxide and hydrocarbons with a maximum of 6 carbon atoms, characterized in that the waste gas is subjected to a separation method producing:

- at least one gas stream comprising methane and for which the recovery rate of hydrogen and carbon monoxide is at least 60%,
- at least one gas stream for which the carbon dioxide recovery rate is at least 40%, and
- at least one supplementary gas stream mainly comprising hydrocarbons with at least 2 carbon atoms.

Claim 21 (new): The method as claimed in claim 20, characterized in that the separation method makes use of a PSA separation unit.

Claim 22 (new): The method as claimed in claim 21, characterized in that the PSA separation unit further produces at least one gas stream mainly comprising hydrogen.

Claim 23 (new): The method as claimed in claim 21, characterized in that the waste gas separation method makes use of a second PSA separation unit producing at least one gas stream mainly comprising hydrogen.

Claim 24 (new): The method as claimed in claim 21, characterized in that the waste gas comprises at least nitrogen and in that the waste gas separation method produces at least one gas stream comprising nitrogen.

Claim 25 (new): The method of claim 21, characterized in that each adsorber of the PSA separation unit is composed of at least three adsorbent beds:

- the first bed being composed of alumina,
- the second bed being composed of a silica gel, and
- the third bed being composed of at least one adsorbent selected from either zeolites or carbon molecular sieves, with average pore sizes between 3.4 and 5 Å and preferably between 3.7 and 4.4 Å, or a titanium-silicate with average pore sizes between 3.4 and 5 Å, and preferably between 3.7 and 4.4 Å.

Claim 26 (new): The method as claimed in claim 25, characterized in that the order of the three adsorbent beds is the following, in the waste gas flow direction in the adsorber: first bed, then second bed, then third bed.

Claim 27 (new): The method as claimed in claim 22, characterized in that each adsorber of the PSA separation unit comprises a fourth adsorbent bed in the waste gas flow direction in the adsorber selected from a zeolite or an activated charcoal if the third bed is a carbon molecular sieve.

Claim 28 (new): The method as claimed in claim 25, characterized in that each adsorber of the PSA separation unit comprises a fourth adsorbent bed in the waste gas flow direction in the adsorber selected from a zeolite or an activated charcoal if the third bed is a carbon molecular sieve.

Claim 29 (new): The method as claimed in claim 23, characterized in that the adsorber of the second PSA separation unit producing at least one gas stream relatively pure in hydrogen is composed of an adsorbent bed comprising at least one activated charcoal.

Claim 30 (new): The method as claimed in claim 24, characterized in that each adsorber comprises a fourth or fifth bed comprising at least one titanium-silicate or one zeolite.

Claim 31 (new): The method as claimed in claim 25, characterized in that each adsorber comprises a fourth or fifth bed comprising at least one titanium-silicate or one zeolite.

Claim 32 (new): The method as claimed in claim 20, characterized in that, downstream of the waste gas treatment, the gas stream from the separation method, comprising methane and for which the recovery rate of hydrogen and carbon monoxide is at least 60%, is treated by a cryogenic unit in order to produce:

- at least one stream essentially comprising hydrogen and carbon monoxide, and
- at least one stream mainly comprising methane.

Claim 33 (new): The method as claimed in claim 20, characterized in that, downstream of the waste gas treatment, the gas stream from the separation method, comprising methane and for which the recovery rate of hydrogen and carbon monoxide is at least 60%, is treated by a cryogenic unit in order to produce:

- at least one stream essentially comprising hydrogen,
- at least one stream mainly comprising carbon monoxide, and
- at least one steam essentially comprising methane.

Claim 34 (new): The method as claimed in claim 20, characterized in that, downstream of the waste gas treatment, the gas stream from the separation method, comprising methane and for which the recovery rate of hydrogen and carbon monoxide is at least 60%, is treated by a downstream PSA method in order to produce:

- at least one stream essentially comprising hydrogen, and
- at least one stream mainly comprising carbon monoxide and methane.

Claim 35 (new): The method as claimed in claim 20, characterized in that at least a portion of the gas stream from the waste gas separation method, comprising methane and for which the recovery rate of hydrogen and carbon monoxide is at least 60%, is used as reagent gas in a method for synthesizing a gas comprising H_2 and CO.

Claim 36 (new): The method as claimed in claim 20, characterized in that at least a portion of the gas stream from the waste gas separation method, comprising methane and for which the recovery rate of hydrogen and carbon monoxide is at least 60%, is used as reagent gas in the Fischer-Tropsch process.

Claim 37 (new): The method as claimed in claim 20, characterized in that at least a portion of the gas stream from the waste gas separation method, mainly comprising hydrocarbons with at least 2 carbon atoms, is used as fuel.

Claim 38 (new): The method as claimed in claim 20, characterized in that at least a portion of the gas stream from the waste gas separation method, mainly comprising hydrocarbons with at least 2 carbon atoms, is used as reagent gas in the generation of synthesis gas.

Claim 39 (new): The method as claimed in claim 22, characterized in that at least a portion of the gas stream from the waste gas separation method, mainly comprising hydrogen, is used for hydrocracking processes.

Claim 40 (new): The method as claimed in claim 23, characterized in that at least a portion of the gas stream from the waste gas separation method, mainly comprising hydrogen, is used for hydrocracking processes.

Claim 41 (new): The method as claimed in claim 31, characterized in that at least a portion of the gas stream from the waste gas separation method, mainly comprising hydrogen, is used for hydrocracking processes.

Claim 42 (new): The method as claimed in claim 32, characterized in that at least a portion of the gas stream from the waste gas separation method, mainly comprising hydrogen, is used for hydrocracking processes.

Claim 43 (new): The method as claimed in claim 20, characterized in that at least a portion of the gas stream from the waste gas separation method, mainly

comprising carbon dioxide, is used as reagent gas in a method for synthesizing gas comprising H_2 and CO.